

**AMENDMENTS TO THE CLAIMS:**

1. (Previously Presented) A positive electrode active material, comprising:  
 a layered lithium manganese compound represented by a general formula  $\text{Li}_{1-x}\text{MO}_2$ ,  
 wherein the M is manganese or a metal of two or more kinds containing manganese as a  
 main component,

the x is a lithium-deficient quantity and satisfies the following expression:

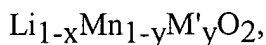
$$1/5 < x$$

and the layered lithium manganese compound satisfies a value of bond overlap  
 population (BOP) between a manganese atom and a proximate oxygen atom as more than or  
 equal to 0.23.

2. (Previously Presented) The positive electrode active material according to claim 1,  
 wherein the x satisfies the following expression:

$$1/5 < x < 1/2.$$

3. (Previously Presented) The positive electrode active material according to claim 1,  
 wherein the general formula  $\text{Li}_{1-x}\text{MO}_2$  is further represented by a formula

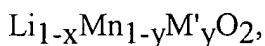


the M' is at least one of a metal other than manganese, substituting for manganese (Mn)  
 and y is a substitution quantity thereof,

the x is represented by a ratio of a/b ( $x = a/b$ ), each of the a and b is a natural number  
 ranging from 1 to 30, and the a and b satisfy:  $a < b$ , and  $1/5 < a/b$ ,

the  $y$  is represented by a ratio of  $c/d$  ( $y = c/d$ ), each of the  $c$  and  $d$  is a natural number ranging from 1 to 30, and the  $c$  and  $d$  satisfy:  $c < d$ .

4. (Previously Presented) The positive electrode active material according to claim 2, wherein the general formula  $\text{Li}_{1-x}\text{MO}_2$  is further represented by a formula



the  $\text{M}'$  is at least one of a metal other than manganese, substituting for manganese (Mn) and the  $y$  is a substitution quantity thereof,

the  $x$  is represented by a ratio of  $a/b$  ( $x = a/b$ ), each of the  $a$  and  $b$  is a natural number ranging from 1 to 30, and the  $a$  and  $b$  satisfy:  $a < b$ , and  $1/5 < a/b < 1/2$ ,

the  $y$  is represented by a ratio of  $c/d$  ( $y = c/d$ ), each of  $c$  and  $d$  is a natural number ranging from 1 to 30, and  $c$  and  $d$  satisfy:  $c < d$ .

5. (Previously Presented) The positive electrode active material according to claim 3, wherein the  $\text{M}'$  is selected from 3d-transition metals.

6. (Previously Presented) The positive electrode active material according to claim 4, wherein the  $\text{M}'$  is selected from 3d-transition metals.

7. (Previously Presented) The positive electrode active material according to claim 3, wherein the  $\text{M}'$  is at least one of iron (Fe) or nickel (Ni).

8. (Previously Presented) The positive electrode active material according to claim 4, wherein the M' is at least one of iron (Fe) or nickel (Ni).

9. (Original) The positive electrode active material according to claim 3, wherein the M' is chromium (Cr).

10. (Original) The positive electrode active material according to claim 4, wherein the M' is chromium (Cr).

11. (Currently Amended) ~~The positive electrode active material according to claim 3,~~  
~~wherein~~ A positive electrode active material, comprising:  
a layered lithium manganese compound represented by a general formula  $\text{Li}_{1-x}\text{Mn}_1$   
 $_y\text{M}'_y\text{O}_2$ ,  
wherein the M is manganese or a metal of two or more kinds containing manganese as a  
main component,  
the M' is at least one of a metal other than manganese, substituting for manganese (Mn)  
and y is a substitution quantity thereof,  
the x is represented by a ratio of a/b ( $x = a/b$ ), each of the a and b is a natural number  
ranging from 1 to 30, and the a and b satisfy:  $a < b$ , and  $1/5 < a/b$ , and the x stabilizes within  
 $\pm 5\%$ ,  
the y is represented by a ratio of c/d ( $y = c/d$ ), each of the c and d is a natural number  
ranging from 1 to 30, and the c and d satisfy:  $c < d$ , and

the layered lithium manganese compound satisfies that a value of bond overlap population (BOP) between a manganese atom and a proximate oxygen atom is more than or equal to 0.23.

12. (Currently Amended) ~~The positive electrode active material according to claim 4,~~  
~~wherein the x stabilizes within  $\pm 5\%$~~  claim 11, wherein the a and b satisfy:  $1/5 < a/b < 1/2$ .

13. (Currently Amended) ~~The positive electrode active material according to claim 3,~~  
~~wherein~~ A positive electrode active material, comprising:

a layered lithium manganese compound represented by a general formula  $\text{Li}_{1-x}\text{Mn}_{1-y}\text{M}'_y\text{O}_2$ ,

wherein the M is manganese or a metal of two or more kinds containing manganese as a main component,

the M' is at least one of a metal other than manganese, substituting for manganese (Mn) and y is a substitution quantity thereof,

the x is represented by a ratio of a/b ( $x = a/b$ ), each of the a and b is a natural number ranging from 1 to 30, and the a and b satisfy:  $a < b$ , and  $1/5 < a/b$ ,

the y is represented by a ratio of c/d ( $y = c/d$ ), each of the c and d is a natural number ranging from 1 to 30, and the c and d satisfy:  $c < d$ , and the y stabilizes within  $\pm 5\%$ ,

the layered lithium manganese compound satisfies that a value of bond overlap population (BOP) between a manganese atom and a proximate oxygen atom is more than or equal to 0.23.

14. (Currently Amended) The positive electrode active material according to ~~claim 4,~~  
~~wherein the y stabilizes within  $\pm 5\%$~~  claim 13, wherein the a and b satisfy:  $1/5 < a/b < 1/2$ .

Claims 15-16 (Canceled)

17. (Previously Presented) The positive electrode active material according to claim 21,  
 wherein the general formula  $\text{Li}_{1-x}\text{Mn}_{1-y}\text{M}'_y\text{O}_{2-\delta}$  is further represented by a general  
 formula  $\text{Li}_{1-x}\text{Mn}_{1-y}\text{M}'_{y(1-z)}\text{M}''_{yz}\text{O}_{2-\delta}$ ,

where the  $\text{M}''$  is at least one metal substituting for the  $\text{M}'$ , the  $z$  is a substitution quantity  
 thereof, and is a rational number represented by a ratio of  $e/f$  ( $z = e/f$ ), and  
 each of the  $e$  and  $f$  is a natural number ranging from 1 to 30 and  
 the  $e$  and  $f$  satisfy:  $e < f$ .

18. (Previously Presented) The positive electrode active material according to claim 22,  
 wherein the general formula  $\text{Li}_{1-x}\text{Mn}_{1-y}\text{M}'_y\text{O}_{2-\delta}$  is further represented by a general  
 formula  $\text{Li}_{1-x}\text{Mn}_{1-y}\text{M}'_{y(1-z)}\text{M}''_{yz}\text{O}_{2-\delta}$ ,

where the  $\text{M}''$  is at least one metal substituting for the  $\text{M}'$ , the  $z$  is a substitution quantity  
 thereof, and is a rational number represented by a ratio of  $e/f$  ( $z = e/f$ ), and  
 each of the  $e$  and  $f$  is a natural number ranging from 1 to 30, and the  $e$  and  $f$  satisfy:  
 $e < f$ .

19. (Original) A method of preparing the positive electrode active material of claim 1,  
 comprising:

mixing a lithium compound and a manganese compound in a ratio equivalent to a composition ratio of Li and Mn in a general formula; and

baking a mixture obtained in the mixing step in an atmosphere with an oxygen concentration of 1000 ppm or lower.

20. (Original) A rechargeable lithium-ion battery, comprising:

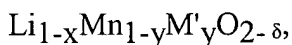
a positive electrode containing the positive electrode active material according to claim 1;

a negative electrode containing at least one selected from the group consisting of a Li metal, complex oxide, nitride and a carbon material; and

an electrolyte interposed between the positive and negative electrodes.

21. (Previously Presented) A positive electrode active material, comprising:

a layered lithium manganese compound represented by a general formula:



wherein the M' is at least one of a metal other than manganese, substituting for manganese (Mn) and y is a substitution quantity thereof,

the x is represented by a ratio of a/b ( $x = a/b$ ), each of the a and b is a natural number ranging from 1 to 30, and the a and b satisfy:  $a < b$ , and  $1/5 < a/b$ ,

the y is represented by a ratio of c/d ( $y = c/d$ ), each of the c and d is a natural number ranging from 1 to 30, and the c and d satisfy:  $c < d$ ,

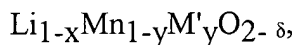
the  $\delta$  denotes an oxygen-deficient quantity and satisfies the following expression:

$$\delta < 0.2, \text{ and}$$

the layered lithium manganese compound satisfies that a value of bond overlap population (BOP) between a manganese atom and a proximate oxygen atom is more than or equal to 0.23.

22. (Previously Presented) A positive electrode active material, comprising:

a layered lithium manganese compound represented by a general formula:



wherein the M' is at least one of a metal other than manganese, substituting for manganese (Mn) and y is a substitution quantity thereof,

the x is represented by a ratio of a/b ( $x = a/b$ ), each of the a and b is a natural number ranging from 1 to 30, and the a and b satisfy:  $a < b$ , and  $1/5 < a/b < 1/2$ ,

the y is represented by a ratio of c/d ( $y = c/d$ ), each of the c and d is a natural number ranging from 1 to 30, and the c and d satisfy:  $c < d$ ,

the  $\delta$  denotes an oxygen-deficient quantity and satisfies the following expression:

$$\delta < 0.2, \text{ and}$$

the layered lithium manganese compound satisfies that a value of bond overlap population (BOP) between a manganese atom and a proximate oxygen atom is more than or equal to 0.23.